

APRIL/MAY 2023

**CEL43/BEL43/UEL43 — DIGITAL
ELECTRONICS**

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Convert $(66)_{10}$ into a binary number.
2. What are BCD codes?
3. Give the functions of OR gate.
4. State any two Boolean theorems.
5. Draw the circuit of half adder.
6. What is an encoder?
7. Write the advantages of JK flip flop.
8. Give the applications of IC 555.
9. Define accuracy.
10. Give the various types of ADC.

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Convert the following octal numbers into binary
- (i) $(543)_8$
 - (ii) $(42.75)_8$

Or

- (b) Discuss in detail error correction/detection codes.
12. (a) Elaborate product of sum method with an example.

Or

- (b) Explain the method to simplify Boolean expressions by Karnaugh map.
13. (a) Describe the working of BCD adder.

Or

- (b) Sketch the significance of CMOS digital logic families.
14. (a) Illustrate the functions of clocked SR flip flop.

Or

- (b) Elucidate the working of shift registers.

15. (a) With a neat sketch explain variable resistor network.

Or

- (b) Compare various types of ADC and DAC.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the concepts of BCD, excess 3 code with a suitable examples.
17. State and prove all the Boolean theorem.
18. Discuss in detail adder and subtractor.
19. Elaborate the functions of JK flip flop.
20. Describe the working of R-2R ladder network.